

**REMARKS**

Reconsideration of this application is respectfully requested.

Claims 1-3, 5-13 and 15-23 are currently pending, with Claims 1, 10, 15, 20 and 23 being independent. Claim 10 has been amended for a typographic error and Claim 23 has been amended to incorporate the recitations of previous Claim 4 and a part of the subject matter of Claim 5, which is considered allowable by the Examiner. It is gratefully acknowledged that the Examiner has found allowable subject matter in dependent Claims 5, 6, 8 and 9.

In the Office Action, the claims are rejected as follows:

Claims 1-3, 7, 10-12 and 15 are rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over *Hadad* (US 2006/0072678 A1) in view of *Simmonds* (US7, 418,039);

Claims 13 and 16 are rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over *Hadad* and *Simmonds* in view of *Applicant's Admitted Prior Art (AAPA)*;

Claim 17 is rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over *Hadad* and *Simmonds* in view of *Laroia et al.* (US 7,397,838);

Claims 18-19 are rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over *Hadad*, *Simmonds* and *Laroia* in view of *AAPA*);

Claim 20 is rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over *AAPA* in view of *Hadad*;

Claims 21-22 are rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over *AAPA* and *Hadad* in view of *Simmonds*; and

Claim 23 is rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over *AAPA* in view of *Laroia* and *Hadad*.

In the Response to Remarks section, the Examiner states that *Simmonds* teaches wherein one or more sub-carriers are allocated as pilot channels based upon said pilot allocation information. That is, the allocation of the sub-carriers is interpreted to be a partitioning of the sub-carriers, and the pilot allocation information is

interpreted to be a basic pilot pattern, which is determined from information channel characteristics. However, Applicants disagree.

As indicated above, independent Claim 1 is rejected under 35 U.S.C. §103(a) as being unpatentable over *Hadad* in view of *Simmonds*. The Examiner asserts that *Hadad* teaches all the recitations of the Claim 1, except for “partitioning subcarrier groups and symbols from the uplink channels based on a basic pilot pattern generated by a specific reference”, which is allegedly taught in *Simmonds*, and the Examiner states that it would have been obvious to combine the teachings of *Simmonds* into the method of *Hadad*.

Regarding the rejection of Claim 1, the Examiner alleges that *Hadad* discloses “wherein the specific subcarrier group is hopped based on a hopping pattern that is generated using an RS code with a same length as that of a subchannel, the RS code being allocated to a corresponding base station based on a number of the subcarrier groups, a basic RS code, a group number, and a cell number,” as recited in Claim 1, citing, *inter alia*, paragraphs [0032], [0109], [0110], [0090], [0105], [0091], [0074], [0092] and [0060] of *Hadad*. However, upon review of these cited sections of *Hadad*, Applicants believe that there is no portion of these citations, or any other section of *Hadad*, which teaches these recitations of Claim 1. Accordingly, Applicants respectfully believe this allegation by the Examiner is incorrect.

Specifically, *Hadad* discloses a method for assigning subcarriers based on R-S codes to other base stations in such a way that adjacent base stations have different R-S codes, thereby minimizing the number of collision points therebetween. More specifically, *Hadad* merely discloses that subcarriers are divided into 23 carrier groups, called basic groups (in paragraph [0090]), each group contains 23 carriers (in paragraph [0092]) and each cell may allocate different codes to subscribers in its cell, taking into account possible interference to adjacent cells (in paragraph [0060]). However, *Hadad* fails to disclose or suggest “the RS code being allocated to a corresponding base station based on a number of the subcarrier groups, a basic RS code, a group number, and a cell number”, as recited in Claim 1.

Therefore, Applicants respectfully submit that the interpretation of *Hadad* asserted by the

Examiner is not actually supported by the disclosure of *Hadad*.

Further, the Examiner asserts that *Hadad* teaches all the recitations of the Claim 1, except for “partitioning subcarrier groups and symbols from the uplink channels based on a basic pilot pattern generated by a specific reference”, which is allegedly taught in *Simmonds*, and that it would have been obvious to combine the teachings of *Simmonds* into the method of *Hadad*. However, Applicants respectfully disagree.

Specifically, the Examiner alleges that *Simmonds* discloses “partitioning subcarrier groups and symbols from the uplink channels based on a basic pilot pattern generated by a specific reference,” as recited in Claim 1, citing, *inter alia*, col. 4 lines 41-48 and lines 63-67, and col. 5 lines 42-51 of *Simmonds*. However, upon review of these cited sections of *Simmonds*, Applicants believe that there is no portion of these citations, or any other section of *Simmonds*, which teaches these recitations of Claim 1. Accordingly, Applicants respectfully believe this allegation by the Examiner is incorrect.

More specifically, *Simmonds* merely discloses a method for determining pilot allocation information based upon the characteristics of a channel over which a signal is to be transmitted and determining how many pilots are needed and where they are positioned amongst the sub-carriers. The sub-carriers are preferably grouped into groups of sub-carriers having similar coherency. However, *Simmonds* fails to disclose or suggest partitioning subcarrier groups and symbols from the uplink channels based on a basic pilot pattern generated by a specific reference, as recited in Claim 1.

Therefore, Applicants respectfully submit that the interpretation of *Simmonds* asserted by the Examiner is not actually supported by the disclosure of *Simmonds*, and that *Simmonds* fails to remedy the deficiencies of *Hadad* described above.

Further, the Examiner alleges that it would be obvious to re-allocate the data in step iii) of Claim 1, in Fig. 5 and paragraphs [0109]-[0120] of *Hadad*, and according to pilots taught by col. 4 lines 41-48 and lines 63-67, and col. 5 lines 42-51 of *Simmonds*.

However, upon review of the Fig. 5 and paragraphs [0109]- [0120] of *Hadad*, and col. 4 lines 41-48 and lines 63-67, and col. 5 lines 42-51 of *Simmonds*, it is respectfully submitted that there is no portion of these citations, or any other section of both references, which teaches these recitations of Claim 1. That is, *Hadad* merely discloses a method for assigning subcarriers based on R-S codes to other base stations in such a way that adjacent base stations have different R-S codes, thereby minimizing the number of collision points therebetween. Based at least upon the arguments above, *Simmonds* fails to disclose or suggest partitioning subcarrier groups and symbols from the uplink channels based on a basic pilot pattern generated by a specific reference, as recited in Claim 1. Therefore, Applicants believe Claim 1 is patentable over the combination of *Hadad* and *Simmonds*, as neither of these references, either alone or in combination, teaches, “differently allocating the pilot per subcarrier group based on the basic pilot pattern from the data hopped in step ii)”, as recited in Claim 1.

Independent Claims 10 and 15 recite similar features as those discussed above regarding independent Claim 1. Therefore, for the same reasons argued above for Claim 1, Applicants respectfully submit that the Examiner is also incorrect in rejecting Claims 10 and 15.

While not conceding the patentability of the dependent claims, *per se*, it is respectfully submitted that Claims 2-4, 7, 9, 11-14 and 16-19 are also patentable for at least the above reasons.

As indicated above, independent Claim 20 is rejected under 35 U.S.C. §103(a) as being unpatentable over *AAPA* in view of *Hadad*. Specifically, the Examiner asserts that *AAPA* teaches all the recitations of the Claim 20, except for “a hopping pattern controller for receiving a specific subcarrier group and a subchannel of a specific symbol unit by a specific reference, hopping the specific subcarrier group according to a specific hopping pattern to allocate data, allocating pilots based on a specific pilot pattern from the allocated data, and transmitting information caused by the allocated data and pilots to the receiver, wherein the hopping pattern is generated by using an RS code which corresponds to a length of the subchannel”, which is allegedly taught in *Hadad*. The Examiner states that it would have been obvious to combine the teachings of *Hadad* into the method of *AAPA*. However, Applicants respectfully disagree.

The Examiner alleges that *Hadad* discloses “a hopping pattern controller for ..., allocating pilots based on a specific pilot pattern from the allocated data, .....,” as recited in Claim 20, citing, *inter alia*, paragraphs [0090]-[0099] of *Hadad*. However, upon review of paragraphs [0090]-[0099] of *Hadad*, Applicants respectfully submit that there is no portion of these citations, or any other section of *Hadad*, which teaches “allocating pilots based on a specific pilot pattern from the allocated data”, as recited in Claim 20. Accordingly, Applicants believe this allegation by the Examiner is incorrect. More specifically, *Hadad* merely discloses an example of subcarriers allocation using RS codes, and fails to disclose or suggest “allocating pilots based on a specific pilot pattern from the allocated data”, as recited in Claim 20.

Independent Claim 20 also recites similar features as those discussed above regarding independent Claim 1. Therefore, for at least the above reasons and the same reasons argued above for Claim 1, Applicants respectfully submit that the Examiner is also incorrect in rejecting Claim 20.

Independent Claim 23 recites similar features as those discussed above regarding independent Claim 20. Additionally, in order to further distinguish the Claim 23 from the Examiner’s cited art, as indicated above, this claim has been amended to incorporate the recitations of Claim 4 and a part of the subject matter of Claim 5, which is considered allowable by the Examiner. Therefore, for the same reasons argued above for Claim 20, Applicants respectfully submit that the Examiner is also incorrect in rejecting Claim 23.

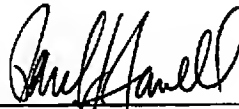
While not conceding the patentability of the dependent claims, *per se*, we believe Claims 21 and 22 are also patentable for at least the above reasons.

Without conceding the patentability *per se* of dependent Claims 2-3 and 5-9, 11-14, 16-19 and 21-23, based at least upon their dependence from amended independent Claims 1, 10, 15 and 20, respectively, these claims are likewise believed to be in condition for allowance.

Accordingly, all pending claims, i.e., Claims 1-3 and 5-23 are believed to be in condition for allowance.

Should the Examiner believe that a telephone conference or personal interview would facilitate resolution of any remaining matters, the Examiner may contact Applicants' attorney at the number given below.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Paul J. Farrell", is written over a horizontal line.

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